

REMARKS

Claims 1-20 are currently pending. Claims 9-20 are allowed, and claims 1-8 are rejected by the Office.

Claims Rejections - 35 USC §112 First Paragraph

The Office has again rejected Claim 7, this time under 35 U.S.C. 112 First Paragraph, as failing to comply with the written description requirement in such a way as to reasonably convey to one skilled in the relevant art that the invention(s), at the time the application was filed, had possession of the claimed invention.

The first paragraph of 35 U.S.C. 112 provides:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention. [emphasis added].

This section of the statute requires that the specification include the following:

- (A) A written description of the invention;
 - (B) The manner and process of making and using the invention (the enablement requirement); and
 - (C) The best mode contemplated by the inventor of carrying out his invention.
- MPEP§2161

The Office previously rejected Claim 7 as being indefinite for claiming SU-8. The resist SU-8 is a common brand name known by all those skilled in the trade. The Office took the position that the composition of the trade name SU-8 could change over time and thus alter the scope of the claim. While the Applicant disagreed with this position, Claim 7 was amended to include the chemical ingredients of SU-8 Series Resists as noted in Section 2 of the Material Safety Data Sheet dated 12 Dec. 2001. As noted, there are many patents (eg: U.S. Pat. No. 4,882,245), texts and websites describing SU-8.

The Office rejects Claim 7 in the present office action and alleges that the original specification does not support all the ingredients listed in the amended Claim 7. However, the Office also notes that SU-8 is known to be from the product type epoxy novolac, and Applicant has amended the claims accordingly.

The Applicant believes that the rejection is traversed but respectfully requests that the Office contact the Applicant's Attorney by telephone if there are any further objections or rejections in this matter.

Claims Rejections - 35 USC §102

The Office has maintained the rejection of claims 1, 6 and 8 under 35 U.S.C. 102(b) as being anticipated by Canavello (US 4,212,935). The Office also rejected claims 1 and 6 under 35 U.S.C. 102(b) as being anticipated by Jennison (US 6,156,487).

As previously noted, a rejection based on anticipation requires that *a single reference teach every element of the claim* (MPEP § 2131) [emphasis added]. "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir.1989). Or stated in another way, a "claim is anticipated only if each and every element as set forth in the claim is found, . . . described in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The Office refers to the following in Canavello Col. 2, lines 13-27:

"Another two-layer technique using photoresist is described, for example, in Applied Physics letters, Vol. 31, No. 5, September 1977, pp. 337-9, and entitled "Offset Masks for Lift-off Photoprocessing." In this method in order to prevent the bottom photoresist layer from becoming dissolved during deposition of the top photoresist layer, a thin intermediate metallic

layer is deposited to protect the lower resist layer during deposition of the top photoresist layer. The top layer is developed and used as a mask for etching through the intermediate metallic layer. Then the intermediate metallic layer and overlaying top resist layer act as a mask during development of the bottom resist layer. This involves still more additional processing steps.”

Thus, the Office rejects the present invention based on the very limited description in the Background section of the cited patent that describes an article from 1977. The article title and abstract do not appear to comport with the conclusions alleged by the Office. Applicant once again requests that the Office provide a copy of this article in order to assess the scope and accuracy of this paragraph relied upon by the Office.

The Board of Patent Appeals and Interferences (BPAI) as well as any reviewing courts have clearly indicated that findings of fact must be supported by substantial evidence within the record. *In re Gartside*, 203 F.3d 1305, 1315, 53 USPQ2d 1769, 1775 (Fed. Cir. 2000) (“Because our review of the Board’s decision is confined to the factual record compiled by the Board . . . the ‘substantial evidence’ standard is appropriate for our review of Board factfindings. See 5 U.S.C. § 706(2)(E).”)

The Office is relying upon the description of an article referenced in the Background section of Canavello, namely “Offset Masks for Lift-off Photoprocessing”, Applied Physics letters, Vol. 31, No. 5, Sept. 1977, pp 337-9. Maintaining a rejection based upon the second hand interpretation of the actual article represent a serious gap in the evidentiary record. Relying strictly on the third party interpretation of the article does not allow for an adequate factual finding regarding the teachings of the article, and what is meant to one of ordinary skill in the art. Thus, reviewing parties would not be able to explain the evidentiary basis for subsequent decisions. Efficient prosecution dictates that, when a rejection by the Office is founded on a document that is not in the record, such an article should be provided. The burden is on the examiner to establish a *prima facie* case of obviousness of the claimed subject matter over prior

art references. *In re Deuel*, 51 F.3d 1552, 1557, 34 USPQ2d 1210, 1214 (Fed. Cir. 1995). Only after that burden is met must the applicant come forward with arguments or evidence in rebuttal. *Id.* Furthermore, findings of fact must be supported by substantial evidence in the record. *In re Gartside*, 203 F.3d 1305, 1315, 53 USPQ2d 1769, 1775 (Fed. Cir. 2000).

Even assuming such statements are valid, Canavelllo still does not anticipate amended Claim 1 which is included below for convenience to easily view those features presently claimed that are not described in the patent application interpretation of the cited article.

A multi-layered lithography structure, the structure comprising:

a substrate;

a first resist layer with a first surface coupled to said substrate, said first resist layer having a first resist ~~developed~~ latent image area;

an opaque barrier layer on a second surface of said first resist ~~with a barrier layer developed area~~, said opaque barrier layer covering said first resist latent image area;

a second resist layer coupled to said opaque barrier layer, said second resist layer having a second resist ~~developed~~ latent image area; and

a means for developing said multi-layered lithography structure wherein said first resist layer is exposed prior to depositing said opaque barrier layer, ~~and~~ wherein said first resist ~~developed~~ latent image area is developed subsequent to said second resist ~~developed~~ latent image area, and wherein a barrier layer developed area is removed prior to developing said first resist latent image area.

The Office recites that Canavelllo describes depositing a thin metallic layer to protect the first resist layer during deposition of the top photoresist layer. However, claim 1 recites that the opaque barrier layer is deposited over the first resist layer which includes covering the first resist latent image area. For example, as shown in Figure 7 of the present application, the opaque

barrier layer (404) covers the exposed but undeveloped 1st resist (206). Canavello does not describe the structural limitation of having a barrier layer on a latent image area. As shown in Figure 8, the developed barrier layer is removed and at least a portion of the remaining barrier layer covers some of the latent image area. The means for developing the multi-layered lithography structure includes having the first resist layer exposed prior to depositing the opaque barrier layer, and furthermore the first resist latent image area is developed subsequent to the second resist latent image area.

There is nothing in Canavello that describes the structure having a first resist layer having a latent image area being exposed but not developed and covered by the opaque barrier layer. There is nothing in Canavello that describes the first resist latent image area being developed subsequent to the second resist latent image area. These claimed limitations are NOT in Canavello and the anticipation rejection is traversed for at least these reasons.

There is also nothing in Canavello that describes or otherwise depicts an “opaque barrier layer.” Canavello states that the background article has “a thin intermediate metallic layer”, but ‘thin’ does not necessarily make it opaque. The present invention clearly describes and claims an opaque barrier layer, not a thin intermediate layer.

As previously noted, Jennison describes a lithographic structure formed by a thick layer of photoresist covered by a barrier layer and a thin imaging layer. The thin imaging layer is exposed and developed and the thin barrier layer is etched. The thick bottom layer of photoresist is then etched using the barrier layer as an etch mask. However, there is no description of latent image areas, a portion of the latent image areas covered by an opaque barrier layer, or of pre-exposing the first resist layer as detailed in the present invention. In addition, Jennison does not expose and develop the first layer but rather, uses the thin imaging layer as an etch mask to transfer the pattern.

Claim 1 has been amended and includes having a latent image area and that the latent image area is covered by the opaque barrier layer. These structural distinctions and the means

for developing are believed to traverse the rejections and reconsideration and allowance is respectfully requested.

Claim Rejections – 35 USC § 103

The Office rejected claims 2 - 5 as being unpatentable over Canavello. The Applicant has amended Claim 1 to include a first resist latent image area that is subsequently covered by an opaque barrier layer among other features.

A rejection under 35 USC §103 is proper only when “the PTO establishes that the invention as claimed in the application is obvious over cited prior art, *based on the specific comparison of that prior art with claim limitations.*” *In re Ochiai*, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995) (emphasis added). Applicant believes that the amended claims traverse the cited art.

As noted in MPEP 2143.03, when an independent claim is non-obvious under 35 U.S.C.103, then any claim depending therefrom is non-obvious. Claims 2 - 5 are dependent on claim 1 and should be allowed. Reconsideration of the rejection of all claims is therefore respectfully requested.

Telephone Interview

Present Office policy places great emphasis on telephone interviews initiated by the examiner. For this reason, it is not necessary for an attorney to request a telephone interview. Examiners are not required to note or acknowledge requests for telephone calls or state reasons why such proposed telephone interviews would not be considered effective to advance prosecution. However, it is desirable for an attorney to call the examiner if the attorney feels the call will be beneficial to advance prosecution of the application. MPEP§408

Applicant believes the above amendments and remarks to be fully responsive to the Office Action, thereby placing this application in condition for allowance. No new matter is added. Applicant requests speedy reconsideration, and further requests that Examiner contact its attorney by telephone, facsimile, or email for quickest resolution, if there are any remaining issues.

Respectfully submitted,

/Scott J. Asmus. Reg. No. 42,269/

Cus. No. 42716
Maine & Asmus
PO Box 3445
Nashua, NH 03061-3445
Tel. No. (603) 886-6100, Fax. No. (603) 886-4796
patents@maineandasmus.com

Scott J. Asmus, Reg. No. 42,269
Andrew P. Cernota, Reg. No. 52,711
Attorneys/Agents for Applicant